PRESS BULLETIN 432 *April, 1931*

IMPERIAL MYCOLOGICAL INSTITUTE 20 JULY 1931

UNIVERSITY OF FLORIDA
AGRICULTURAL EXPERIMENT STATION
GAINESVILLE

TREATMENT OF GUMMOSIS AND PSOROSIS OF CITRUS TREES

By ARTHUR S. RHOADS
Associate Plant Pathologist, Florida Experiment Station

Since gummosis and psorosis usually have not yielded to the haphazard methods of treatment formerly used, many growers simply have become resigned to the occurrence of these bark diseases and consider it useless to attempt to control them. Recent experimental work, however, demonstrates that both of these diseases can be cured fairly readily in most cases by a bark-scraping method of treatment, provided they or other causes have not seriously weakened the vitality of the trees. However, the ease of treatment and likelihood of cure are decreased when these diseases have been allowed to go unchecked for several years. To be effective, the treatment recommended must be administered carefully, thoroughly, and intelligently, and be followed by supplementary treatments as necessary. It is largely a waste of time and material to attempt to cure trees affected by either gummosis or psorosis by merely removing the loose, scaling bark, perhaps cutting out a few gum pockets, and applying carbolineum, paint, or other preparations, as has been the general practice in the past, without first doing a thorough job of bark scraping. Moreover, many fine bearing trees are killed annually through the promiscuous use of untested carbolineums.

METHOD OF TREATMENT

The trees to be treated should first be pruned of all dead branches and those badly weakened by the disease. All gum masses should be cut off and all loose, scaling bark should be removed. The principle governing the treatment of both gummosis and psorosis is the elimination of the invaded outer bark tissue without interfering with the production of new, healthy bark from the cambium, or growing layer. This is accomplished by scraping off the outermost layer of diseased bark and applying some good disinfectant paste or wash such as lime-sulphur paste or wash or bordeaux paste as soon as the bark lesions on each tree have been thoroughly scraped. This treatment allows the remaining outer layers of bark to dry out and checks the development of the disease. This part of the bark will slough off later in flakes or scales of variable size.

The scraping should be just deep enough to remove almost all the green layer that is found immediately beneath the outermost dark colored corky tissue and should never extend deeper than a third of the way through the bark; otherwise the bark is likely to die. The outer bark should be scraped thus not only over all the affected parts but also less deeply for a distance of from at least 4 to 6 inches above and below and from 3 to 4 inches beyond the lateral margins of the lesion, unless it extends nearly or entirely around the trunk or limb. It is not necessary to cut out discolored areas of bark that show up after scraping away the dark surface, or to cut out small gum pockets or the areas of bark that have become hardened

from gum-infiltration, since this bark will dry out, crack loose, and slough off later. In scraping over the hard, gum-infiltrated places, care must be used to prevent the implement from jumping and gouging out the intervening green bark, which is much softer. Any considerable area of bark that is dead down to the wood or has been loosened by gum formation beneath it should be cut out back to the margin of the callus tissue developing under or around it.

After the bark has been thoroughly scraped and treated as directed, the scraped area should be painted with some good, safe disinfectant paste or wash. All areas of exposed wood should later be painted with some good waterproof wound dressing to prevent the entrance of wood-boring insects or decay-producing fungi. The application of a fungicidal paste or wash to the scraped bark is of value in checking the development of the organism causing the disease, in preventing subsequent infection, and in stimulating the drying up and sloughing off of the outer layer of scraped bark. Of the various disinfectants thus far tested, the lime-sulphur or lime and sulphur compounds appear to be the most effective in stimulating the bark scaling process, while thick carbolineums, paints, and other preparations that exclude the air, retard it. The more or less abundant exudation of gum that occurs for a time from season checks that develop in the freshly scraped bark surfaces is no indication that the treatment will not be successful and should be disregarded. This is bound to occur as a result of the liberation of the gum that is already formed under the bark. Within a period of from 3 to 6 months from the date of treatment, depending upon the kind and vigor of the tree and the fungicide applied, the outer bark will crack loose and start sloughing off, exposing the new and usually healthy bark. The loosened bark may be rubbed off later with a wire bristle brush or even with the hand. Bark treated during the late spring and early summer months recovers most rapidly.

All trees treated for either gummosis or psorosis should be inspected at intervals of a few months, especially during the late spring and early summer when these bark diseases develop most rapidly. In case the bark was not scraped sufficiently far in advance of the disease to check its development, or new infections have developed, an additional area should be scraped and treated as before. Growers cannot expect an infallible cure in advanced cases of either gummosis or psorosis by a single treatment; a second, and sometimes even a third, supplementary treatment may be required. The importance of scraping the bark well in advance of the margins of the lesions and of the follow-up treatments where the development of the disease has not been checked cannot be too strongly emphasized.

TOOLS FOR SCRAPING

A number of different types of scraping implements may be used for treating trees attacked by gummosis or psorosis. The most important thing, after convenience and efficiency for the work, is that they have a sharp scraping edge. No one tool will serve all purposes. A box scraper and a farrier's knife have been found to be the most satisfactory implements thus far tried. The former is excellent for heavy work; the latter, with the end bent into a curve and retempered, is excellent for light scraping and working in crotches and for gouging out small gum pockets in the bark. The box scraper comprises a reversible, triangular-edged blade mounted in a handle with a slightly curved shank. One or more of the corners of the scraping blade may be ground off round to enable the operator to work in crotches and depressions.

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